IN THE CLAIMS

Please amend the claims as follows:

Claim 1 (Currently Amended): A method of processing a received signal, comprising the ~~steps~~ step of:

detecting within said received signal a plurality of possible symbols ($d_k(i)$) transmitted by or for a plurality K of users, each of the plurality of possible symbols belonging to a modulation constellation and being the subject of a spectral spreading by a spreading sequence ($s_k(t)$), said step of detecting comprising substeps of:

filtering said received signal, said filtering step adapted for supplying a complex vector characteristic of said received signal, and including decomposing said complex vector into a real vector ($y^R(i)$) and an imaginary vector ($y^I(i)$);

searching separately for at least a closest neighbor of the real vector and a closest neighbor of the imaginary vector within a respective real and imaginary lattice of points (Λ,Ω) corresponding to said modulation constellation; and

estimating the transmitted symbols from components of said closest neighbor of the real vector and the closest neighbor of the imaginary vector so as to produce a vector of estimated symbols.

Claim 2 (Previously Proposed): The method according to Claim 1, wherein the spreading sequence ($s_k(t)$) consist of real multiples ($s_k^0(t)$) of a corresponding complex coefficient (σ).

Claim 3 (Previously Proposed): The method according to Claim 1, wherein the step of searching is limited to a first set of points in the real lattice belonging to a first

predetermined zone (Σ_R) around the real vector and a second set of points in the imaginary lattice belonging to a second predetermined zone (Σ_I) around the imaginary vector.

Claim 4 (Previously Proposed): The method according to Claim 1, wherein the step of searching is limited to a first set of points in the real lattice belonging to a first predetermined zone (Σ_R) around the origin and a second set of points in the imaginary lattice belonging to a second predetermined zone (Σ_I) around the origin.

Claim 5 (Previously Proposed): The method according to Claim 3, wherein said first and second predetermined zones (Σ_R and Σ_I) are spheres of probability.

Claim 6 (Previously Proposed): The method according to Claim 1, wherein the step of searching closest neighbor of the real vector includes searching a plurality of components thereof, the searching of the plurality of components being limited for each of said components to an interval defined for a lower bound and an upper bound, said upper and lower bounds being chosen so that said interval excludes points relating to symbols which mathematically cannot belong to the modulation constellation.

Claim 7 (Currently Amended): The method according to Claim 1, wherein the step of searching for the closest neighbor of the imaginary vector includes searching a plurality of components thereof, the searching a plurality of components being limited for each of said components to an interval defined for a lower bound and an upper bound, said upper and lower bounds being chosen so that said interval excludes points relating to symbols which mathematically cannot belong to the modulation constellation.

Claim 8 (Previously Proposed): The method according to Claim 1, wherein, prior to the search for the closest neighbor of the real vector, the real vector ($y^R(i)$) is subjected to a matrix processing (320) to substantially decorrelate different noise components thereof.

Claim 9 (Previously Proposed): The method according to Claim 1, wherein, prior to the search for the closest neighbor of the imaginary vector, the imaginary vector ($y^I(i)$) is subjected to a matrix processing (321) to substantially decorrelate different noise components thereof.

Claim 10 (Previously Proposed): The method according to Claim 1, wherein said step of searching includes searching for a first set of points which are closest to said real vector and searching for a second set of points which are closest to said imaginary vector and in that the transmitted symbols are estimated via a soft detection from

symbols corresponding to said first and second sets, and

a first set of distances separating points of said first set from said real vector and a second distance set of distances separating points of said second set from said imaginary vector.

Claim 11 (Currently Amended): The method according to Claim 1, wherein contributions of each user to the received signal obtained by the filtering step are determined from the estimated symbol and in that, for a given user k, contributions of other users to the received signal corresponding to transmitted symbols already estimated are eliminated ~~at an output of~~after the filtering step.

Claim 12 (Previously Proposed): The method according to Claim 1, wherein contributions of each user to the received signal are determined from the estimated symbol

and in that, for a given user *k*, contributions of other users corresponding to transmitted symbols already estimated are eliminated at the input of the filtering step.

Claim 13 (Previously Proposed): The method according to Claim 1, wherein, the symbols of said *K* users are transmitted synchronously, and said lattice of points is of dimension *K*.

Claim 14 (Previously Proposed): The method according to Claim 11, wherein, the symbols of said *K* users are transmitted asynchronously and propagated along a plurality of paths, and a dimension of the lattice is equal to a number of symbols of the different users which are mathematically possible interfering symbols and are not yet estimated.

Claim 15 (Previously Proposed): A communication device, comprising:

a processor configured to implement the method recited in any one of Claims 1-14.

Claim 16 (Previously Proposed): A receiver for a DS-CDMA mobile telecommunication system comprising the communication device recited in Claim 15.